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EXAMINER	
AKHAVANNIK, HUSSEIN	
ART UNIT	**PAPER NUMBER**
2621	

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13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/493,192	KANEKO ET AL.	
	Examiner	Art Unit	
	Hussein Akhavannik	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-23 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-23 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 June 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

1. The references cited in the submitted IDS (Paper No. 12) overcome the Examiner's request cited in paragraph 1 of the previous office action.

2. The amendments to figures 43 and 2D overcome the Examiner's objections cited in paragraph 2 of the previous office action.

Response to Arguments

3. Applicant's arguments filed June 30, 2003 have been fully considered but they are not persuasive.

The Applicant alleges that Chakraborty et al do not disclose or suggest the feature of a function being represented by a parameter as recited in independent claims 1, 8, and 15. The Examiner respectfully disagrees. Please note that claim 5 further limits the definition of the parameter to include position data of knots of the trajectory and information specifying the trajectory used together with position data of the knots of the trajectory. Chakraborty et al explain in column 13, lines 24-32 that the position of the boundary points for the rectangle object being tracked in the video are given. For example, the top left coordinate of the rectangle is given as (254,161). The position data is provided in the AIU files in conjunction with the spline function defining the trajectory of the object. Therefore, the position parameters making up the trajectory function certainly support the broader recitation of the parameters in claim 1 as they as they describe the region data of an object. Even if the details of the position parameters were not present in Chakraborty et al, the frame number disclosed in column 8, lines 53-59 by

Chakraborty et al would still meet the broader recitation of the parameters disclosed in independent claims 1, 8 and 15, as explained in paragraph 4 of the previous office action.

The Applicant alleges that Yokoyama does not disclose or suggest the feature of a function being represented by a parameter as recited in independent claims 1, 8, and 15. However, Yokoyama does determine the position of a representative point in two successive frames in equation 2 of column 6, lines 43-60. As illustrated in figure 7, the representative points (x_1,y_1), (x_2,y_2), and (x_3,y_3) are parameters that determine the region data of an object of interest. The position information of all three representative points is used in equation 8 for motion between successive frames by Yokoyama in column 8, lines 30-33. The claimed parameters of the Applicant are explained in claim 5 to be position data of knots of the trajectory (variables of equation 8) and information specifying the trajectory (coefficients of equation 8).

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the

reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-23 are rejected under 35 U.S.C. 102(e) as being anticipated by Chakraborty et al (U.S. Patent No 6,462,754).

Referring to claim 1, which is representative of claims 8 and 15,

i. Extracting position data of a representative point of an approximate figure approximating the region or a characteristic point of the region from the plurality of frames is explained by Chakraborty et al in column 9, line 62 to column 10, line 2. The rectangle, ellipse, circle, or polygons represent the approximate figure approximating a region. The coordinates extracted, such as the coordinates of a rectangle that defines a bounding box of a circle, are the representative points. Chakraborty et al further explains the representative points to be stored for each approximate figure in column 13, lines 24-67.

ii. Determining a function approximating a trajectory which links corresponding representative points or corresponding characteristic points of successive frames, the function being represented by a parameter is explained by Chakraborty et al in column 8, lines 53-59. A spline (or linear if only concerned with two frames) function is determined to represent the trajectory between two points or vertices. The parameter representing the spline function is the start and end frames.

iii. Describing the parameter of the function as the region data is explained by Chakraborty et al in column 8, lines 53-59. The frame number is a parameter of

the spline function, as the points or vertices for which a trajectory is calculated are each from a certain frame in the video. Chakraborty et al use the variable "t" in the spline function to represent time, which corresponds to a frame number in column 8, lines 26-39. Furthermore, Chakraborty et al explain in column 13, lines 24-32 the position of the boundary points for the rectangle object being tracked in the video are given. The positions of the representative points are parameters defining the region data and representing the trajectory function.

Referring to claim 2, which is representative of claims 9 and 16, describing information specifying a leading frame or a trailing frame of the plurality of frames as the region data is explained by Chakraborty et al in column 8, lines 53-59. The spline function between the points or vertices of the frames is calculated between start and end frame, which correspond to the leading frame and the trailing frame.

Referring to claim 3, which is representative of claims 10 and 17, describing information of the type of the approximate figure as the region data is explained by Chakraborty et al in column 9, lines 37-48. The outline shapes, such as an ellipse, a circle, a rectangle, or a polygon are used to structures of interest in a frame. These structures are included in the video information (AIU) file as "type" as Chakraborty et al show in column 12, line 37 for "ellipse".

Referring to claim 4, which is representative of claims 11 and 18, describing information of the number of the approximate figure as the region data is explained by Chakraborty et al in column 9, lines 49-54. Chakraborty et al explains that more than one approximate figure is possible and that these approximate figures are stored in the an AIU file of the video.

Chakraborty et al further show the number of the approximate figure in column 12, line 37 as "Id", which for the ellipse is "VAIU02".

Referring to claim 5, which is representative of claims 12 and 19, the parameter data including position data of knots of the trajectory and information specifying the trajectory used together with position data of the knots of the trajectory is explained by Chakraborty et al in column 13, lines 24-32. Chakraborty et al explain that the position of the boundary points for the rectangle object being tracked in the video are given. For example, the top left coordinate of the rectangle is given as (254,161). The position data is provided in the AIU files in conjunction with the spline function defining the trajectory of the object, corresponding to claim 1.

Referring to claim 6, which is representative of claims 13 and 20,

i. A plurality of the representative points or the characteristic points being included in a certain frame is explained by Chakraborty et al in column 9, lines 49-54, where Chakraborty et al explain the possibility of more than one approximate figure in each frame. Furthermore, Chakraborty et al explain that each approximate figure can has at least 2 representative points corresponding to claim 1i. Therefore, a frame with multiple approximate objects will also include multiple representative points.

ii. The region data including information specifying correspondence among a plurality of the representative points or characteristic points in the certain frame and a plurality of the representative points or characteristic points in an adjacent frame is explained by Chakraborty et al in column 12, line 4 to column 13, line 5. Chakraborty et al show an AIU file which includes information about the frame

number ("StartFrame" and "EndFrame"), the approximate figure ("Type"), and the representative points ("BoundryList"). Therefore, the region data (AIU of Chakraborty et al) includes information for each of the representative points in a frame and any of its succeeding frames.

Referring to claim 7, which is representative of claims 14 and 21, describing related information related to the object or information indicating a method of accessing the related information is explained by Chakraborty et al in column 12, lines 5-11. The AIU file contains the file name, description, and characteristics such as frame rate and start and end frame number to indicate information related to an object.

Referring to claim 22,

i. Identification information of the object corresponds claim 1, where representative points are extracted to identify an object.

ii. Information specifying a leading frame and a trailing frame of the plurality of frames corresponds to claim 2.

iii. Information related to the object corresponds to claim 3, where the information is the type of approximate figure used to approximate the object.

iv. Information indicating a method of accessing the related information corresponds to claim 7.

v. Information of the number of the approximate figure corresponds to claim 4.

vi. Approximate figure information which includes information of the type of the approximate figure corresponds to claim 3.

vii. Number information of the representative point is explained by Chakraborty et al in the AIU file, in column 12, as the <Boundary> variable. Each <Boundary> variable corresponds to a representative point of the approximate figure. Therefore, multiple <Boundary> variables correspond to multiple representative points of an object.

viii. Function data of the spline function approximating the trajectories of the representative point which includes knot information corresponds to claim 1.

ix. Order information of the spline function is explained by Chakraborty et al in column 8, line 53 to column 9, line 5. Using a linear least squares estimate as the trajectory of representative points, the order of the spline function would be given as one.

x. Coefficient information of the spline function is explained by Chakraborty et al in column 5, line 53 to column 9, line 5. The affine parameters of the representative points would correspond to the coefficients of the linear least squares estimate of the trajectories of the representative points.

Referring to claim 23, this claim corresponds to claim 22 for characteristic points. The applicant defines characteristic points on page 69, lines 14-16 as any point, for example a corner of an object. Chakraborty et al explain that the representative points of a rectangle approximating figure could be the coordinates of the diagonals of the rectangle in column 9, lines 60-64. The diagonals correspond to the corners of the rectangle and therefore the representative point of Chakraborty et al may correspond to the characteristic points.

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 8-10, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Yokoyama (U.S. Patent No. 5,751,365).

Referring to claim 1, which is representative of claims 8 and 15,

i. Extracting position data of a representative point of an approximate figure approximating the region or a characteristic point of the region from the plurality of frames is explained by Yokoyama in column 9, lines 17-33. Representative points are extracted from triangular sections illustrated by Yokoyama in figure 3B. Yokoyama also illustrates representative points being extracted from other approximate figures in figures 3c to 3j.

ii. Determining a function approximating a trajectory which links corresponding representative points or corresponding characteristic points of successive frames, the function being represented by a parameter is explained by Yokoyama in column 8, line 15 to column 9, line 13. The parameter representing the function is the position of the representative points (x_1,y_1), (x_2,y_2), and (x_3,y_3) expressed in equation 8.

iii. Describing the parameter of the function as the region data is explained by Yokoyama in column 8, lines 30-33 and illustrated in figure 7. The parameter of

the function would be the position of the representative points representing the triangle region of an object of interest as illustrated in figure 7.

Referring to claim 2, which is representative of claims 9 and 16, describing information specifying a leading frame or a trailing frame of the plurality of frames as the region data is explained by Yokoyama in column 6, lines 43-60 and illustrated in figure 7. The leading frame would correspond to the current frame and the trailing frame would correspond to the previous frame.

Referring to claim 3, which is representative of claims 10 and 17, describing information of the type of the approximate figure as the region data is illustrated by Yokoyama in figures 3a to 3j.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hussein Akhavannik whose telephone number is (703)306-4049. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on (703)305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Hussein Akhavannik H.A.
August 26, 2003

LEO BOUDREAU
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